

Amendments

In the claims:

Claims 1-8 are withdrawn.

Cancel claims 9 - 16, 18 and 19 and substitute therefore the following new claims 26 – 28.

At claim 17, line 1 delete “9” and substitute therefor -- 26 --;

At claims 20 and 21, line 1 delete “19” and substitute therefor -- 28 --.

All as shown on the attached Listing of Claims

26) (New) A microcellular nanocomposite or molecular-composite polymer

foam shape produced by a process comprising:

a) compression molding a nanocomposite or molecular-composite polymer to be foamed into a consolidated shape

comprising up to about 30 weight percent of a filler selected

from the group consisting of chopped glass fibers, carbon

fibers, metallic fibers, aramid fibers, ceramic whiskers,

ceramic fibers and calcium carbonate powder;

b) saturating the consolidated shape with an inert gas at an

elevated pressure and at a temperature above the glass

transition temperature of said polymer;

c) fully or partially releasing the pressure; and

d) controllably quenching said polymer shape to a temperature

below the glass transition temperature of the polymer.

27) (New) A microcellular nanocomposite or molecular-composite polymer

foam shape produced by a process comprising:

- a) compression molding a nanocomposite or molecular-composite polymer selected from the group consisting of blends of nanofibers or nano powders with a polymer and polyhedral oligomeric silsesquioxanes into a consolidated shape;**
- b) saturating the consolidated shape with an inert gas at an elevated pressure and at a temperature above the glass transition temperature of said polymer;**
- c) fully or partially releasing the pressure; and**
- d) controllably quenching said polymer shape to a temperature below the glass transition temperature of the polymer.**

28) (New) A microcellular nanocomposite or molecular-composite polymer

foam shape produced by a process comprising:

- a) compression molding a molecular-composite polymer comprising rigid rod polymer molecules dispersed in a matrix of a flexible coil polymer at the molecular level.**
- b) saturating the consolidated shape with an inert gas at an elevated pressure and at a temperature above the glass transition temperature of said polymer;**
- c) fully or partially releasing the pressure; and**

d) controllably quenching said polymer shape to a temperature below the glass transition temperature of the polymer.